ELSEVIER

Surgery for Obesity and Related Diseases ▮ (2018) 00–00

SURGERY FOR OBESITY AND RELATED DISEASES

Original article

The incidence of complications associated with loop duodeno-ileostomy after single-anastomosis duodenal switch procedures among 1328 patients: a multicenter experience

Amit Surve, M.D.[a], Daniel Cottam, M.D.[a,*], Andres Sanchez-Pernaute, M.D., Ph.D.[b], Antonio Torres, M.D.[b], Joshua Roller, M.D.[c], Yong Kwon, M.D.[c], Joshua Mourot, M.D.[c], Bleu Schniederjan, M.D., F.A.C.S., F.A.S.M.B.S.[d], Bo Neichoy, M.D.[d], Paul Enochs, M.D., F.A.C.S., F.A.S.M.B.S.[e], Michael Tyner, M.D., F.A.M.B.S.[e], Jon Bruce, M.D., F.A.C.S., F.A.S.M.B.S.[e], Scott Bovard, M.D., F.A.C.S., F.A.S.M.B.S.[e], Mitchell Roslin, M.D.[f], Muhammad Jawad, M.D., F.A.C.S.[g], Andre Teixeira, M.D.[g], Myur Srikanth, M.D. F.A.C.S., F.A.S.M.B.S.[h], Jason Free, M.B.B.S., B.V.Sc, F.R.A.C.S.[i], Hinali Zaveri, M.D.[a], David Pilati, M.D., F.A.C.S.[e], Jamie Bull, S.T., C.R.C., B.S.N.C.[e], LeGrand Belnap, M.D.[a], Christina Richards, M.D., F.A.C.S.[a], Walter Medlin, M.D., F.A.C.S.[a], Rena Moon, M.D.[g], Austin Cottam[a], Sarah Sabrudin, M.D.[f], Samuel Cottam[a], Aneesh Dhorepatil, M.B.B.S.[a]

[a]*Bariatric Medicine Institute, Salt Lake City, Utah*
[b]*Hospital Clínico San Carlos, Madrid, Spain*
[c]*Roller Weight Loss & Advanced Surgery, Fayetteville, Arkansas*
[d]*Panhandle Weight Loss Center, Amarillo, Texas*
[e]*Bariatric Specialists of North Carolina, Cary, North Carolina*
[f]*NS-LIJ-Lenox Hill Hospital, New York, New York*
[g]*Orlando Regional Medical Center, Orlando, Florida*
[h]*Center for Weight Loss Surgery, Federal Way, Washington*
[i]*Surgery Gold Coast, Benowa, Queensland, Australia*

Received October 4, 2017; accepted January 17, 2018

Abstract

Background: The single-anastomosis duodenal switch procedure is a type of duodenal switch that involves a loop anastomosis rather than traditional Roux-en-Y reconstruction. To date, there have been no multicenter studies looking at the complications associated with post-pyloric loop reconstruction.

Objectives: The aim of the study was to report the incidence of complications associated with loop duodeno-ileostomy (DI) following single-anastomosis duodenal switch (SADS) procedures.

Setting: Mixed of private and teaching facilities.

Methods: The medical records of 1328 patients who underwent primary SADS procedure (single-anastomosis duodeno–ileal bypass with sleeve gastrectomy or stomach intestinal pylorus-sparing surgery) by 17 surgeons from 3 countries (United States, Spain, and Australia) at 9 centers over a 6-year period were retrospectively reviewed, and their results were compared with articles in the literature.

*Correspondence: Daniel Cottam, M.D., Bariatric Medicine Institute, 1046 East 100 South, Salt Lake City, UT 84102.

E-mail address: drdanielcottam@yahoo.com, dpilati@surgerync.com, JBull@surgerync.com

https://doi.org/10.1016/j.soard.2018.01.020

Results: Mean preoperative body mass index was 51.6 kg/m^2. Of 1328 patients, 123 patients received a linear stapled duodeno-ileostomy (DI) and 1205 patients a hand-sewn DI. In the overall series, the anastomotic leak, ulcer, and bile reflux occurred in .6% (9/1328), .1% (2/1328), and .1% (2/1328), respectively. None of our patients experienced volvulus at the DI or an internal hernia. Overall, 5 patients (.3%) (3/123 [2.4%] with linear stapled DI versus 2/1205 [.1%] with hand-sewn DI [$P < .05$]) experienced stricture at the DI in this series.

Conclusions: The overall incidence of complications associated with loop DI was lower than the reported incidence of anastomotic complications after Roux-en-Y gastric bypass and biliopancreatic diversion with duodenal switch. SADS procedures may cause much fewer anastomotic complications compared with Roux-en-Y gastric bypass and biliopancreatic diversion with duodenal switch. (Surg Obes Relat Dis 2018;▮:00–00.)

Keywords: Incidence; Duodeno-ileostomy; Gastrojejunostomy; Single-anastomosis duodenal switch; Roux-en-Y gastric bypass; Biliopancreatic diversion with duodenal switch

Historically, the 4 most common types of bariatric surgical techniques include Roux-en-Y gastric bypass (RYGB), adjustable gastric banding, sleeve gastrectomy (SG), and biliopancreatic diversion with duodenal switch (BPD-DS). Recently, a variant of the BPD-DS, called the single-anastomosis duodenal switch (SADS), has been popularized around the world, but the numbers of published reports have been small in comparison with other bariatric surgical procedures [1]. The SADS procedure is a type of duodenal switch (DS) that involves a loop anastomosis rather than traditional Roux-en-Y reconstruction [2]. This modification simplifies the procedure, decreases the potential complication rate, and combines the physiologic advantages of a post-pyloric reconstruction with the technical advantages of a loop reconstruction.

The SADS procedure has gone by many names and can be categorized into 2 categories, depending on the position of the anastomosis. Procedures like loop duodenojejunostomy bypass with SG and single-anastomosis duodeno-jejunal bypass with SG use duodenum and jejunum, whereas single-anastomosis duodeno-ileal bypass with SG (SADI-S) and stomach intestinal pylorus-sparing (SIPS) use duodenum and ileum to create the anastomosis [3–6].

In this report, surgeons from different centers have performed either SADI-S or SIPS. The SIPS was introduced in the United States in 2013. The SIPS surgery is also a modification of DS [6,7]. It is similar to SADI-S but differs in that a smaller bougie is used and the intestinal length is 50 cm longer [8]. However, in both procedures the technique to create the duodenoileostomy (DI) is same. Currently, numerous reports address the incidence of anastomotic complications after RYGB [9–13]. This is the first article in the literature that reports the incidence of complications associated with loop DI after SADS procedures (SADI-S and SIPS).

Methods

The medical records of 1328 patients who had undergone primary SADS procedure by 17 surgeons at 9 centers over a 6-year period were retrospectively reviewed from each institution's prospectively collected database. The centers are as follows: center 1—Bariatric Medicine Institute in the United States, performed by DC; center 2—Hospital Clínico San Carlos in Spain, performed by ASP and A. Torres; center 3—Roller Weight Loss & Advanced Surgery in the United States, performed by JR, YK, and JM; center 4—Panhandle Weight Loss Center in the United States, performed by BS and BN; center 5—Bariatric Specialists of North Carolina in the United States, performed by PE, MT, JB, and SB; center 6—NS-LIJ-Lenox Hill Hospital and Northern Westchester Hospital in New York in the United States, performed by MR; center 7—Orlando Regional Medical Center in the United States, performed by MJ and A. Teixeira; center 8—Center For Weight Loss Surgery in the United States, performed by MS; and center 9—Pindara Private Hospital in Australia, performed by JF. The data collection was standardized across the 9 institutions. Each database retrospectively searched for anastomotic complications unique to the creation of the DI. These were then placed into the studies database. This database was unique; however, 25% of the patients in the database have been included in previously published articles by the authors.

Each center had an informed consent process in place before the study; the process included a consent detailing the procedure, risks, and potential benefit. Each patient was given an examination before surgery to verify understanding of the procedure. Demographic data were collected for all patients, including age, weight, and body mass index. All patients were advised to have monthly postoperative follow-up visits. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Because this is a retrospective study, formal consent was not required.

The inclusion criterion was primary SADS procedure. Descriptive statistics were used to analyze preoperative characteristics, such as weight and body mass index.